Coaching Flow

Implementing an effective flow system

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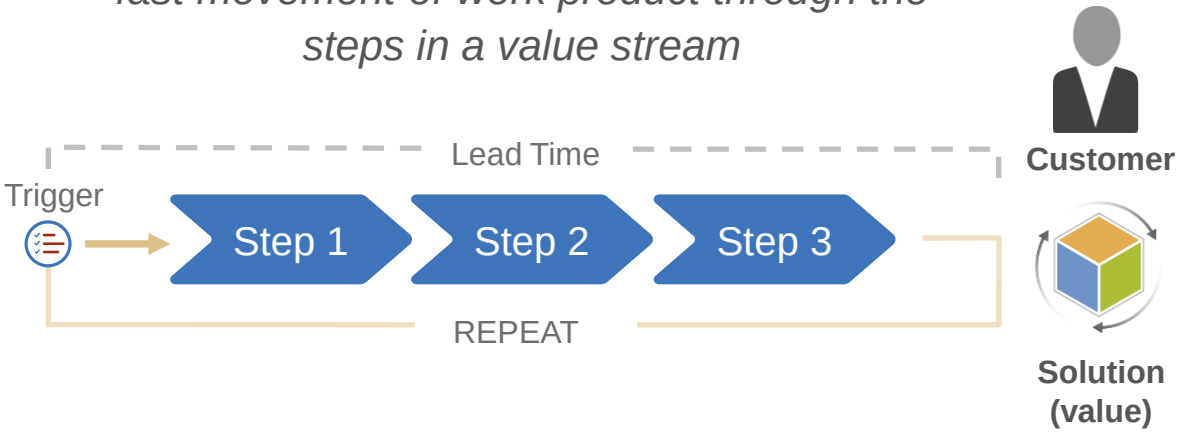
Scaled Agile

Lean thinking and Flow

- Precisely specify value by product
- Identify the Value Stream for each product
- Make value flow without interruptions
- Let the Customer pull value from the producer
- Pursue perfection

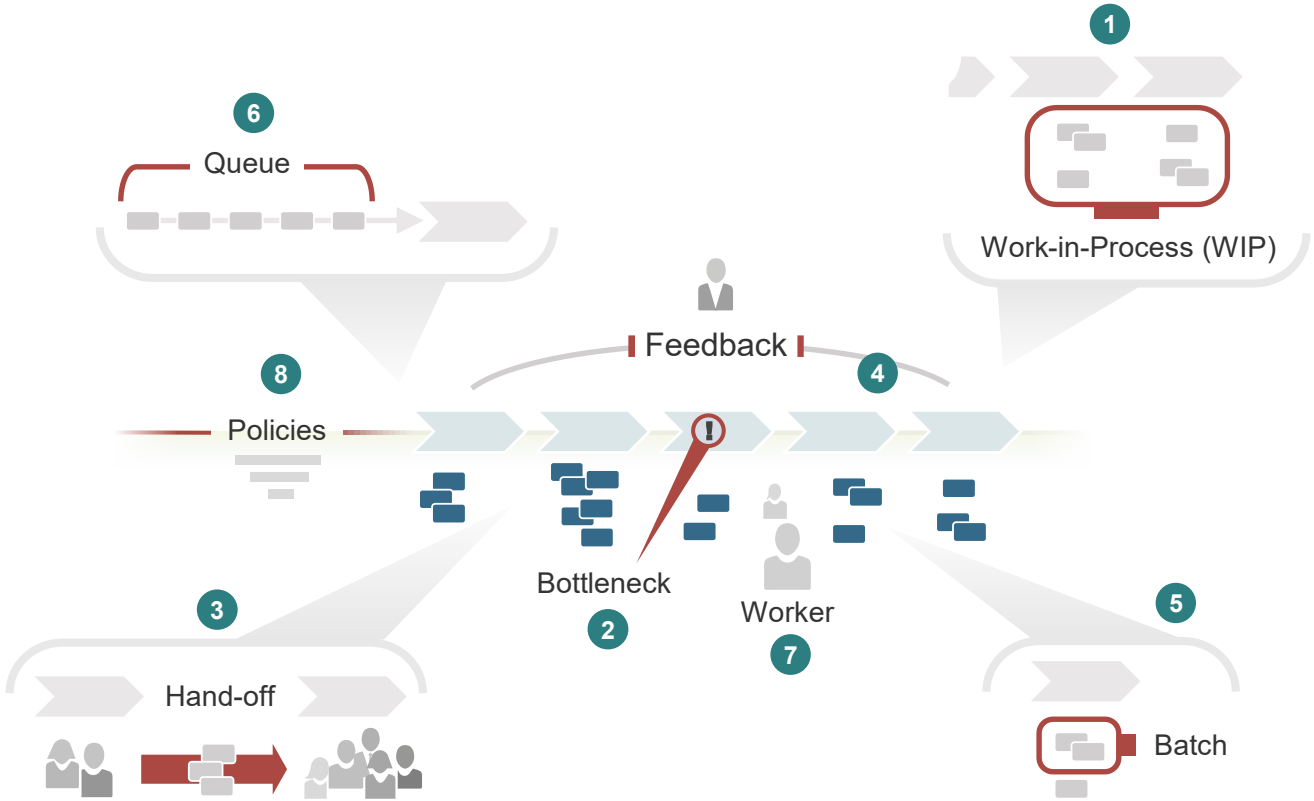
***Flow** occurs when there is a smooth, linear, and fast movement of work product through the steps in a value stream*



“To enable fast and predictable lead times in any value stream, there is usually a relentless focus on creating a smooth and even flow of work.”

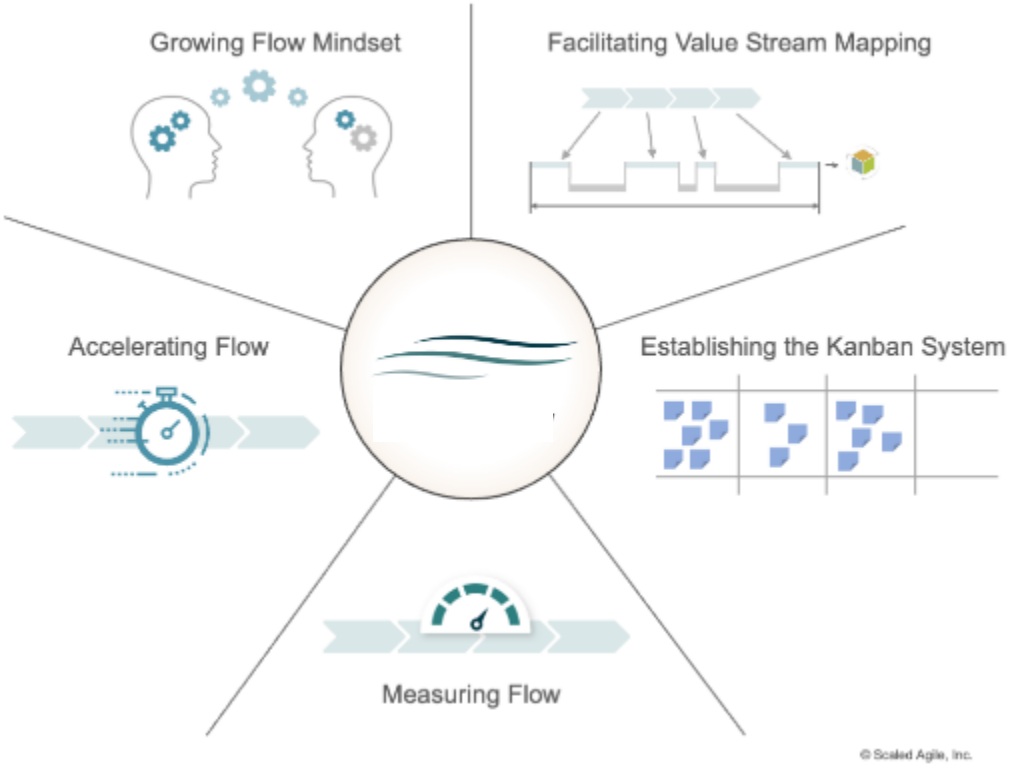
—**Gene Kim** et al., The DevOps Handbook

Eight properties of a value flow system



Flow is a shared responsibility

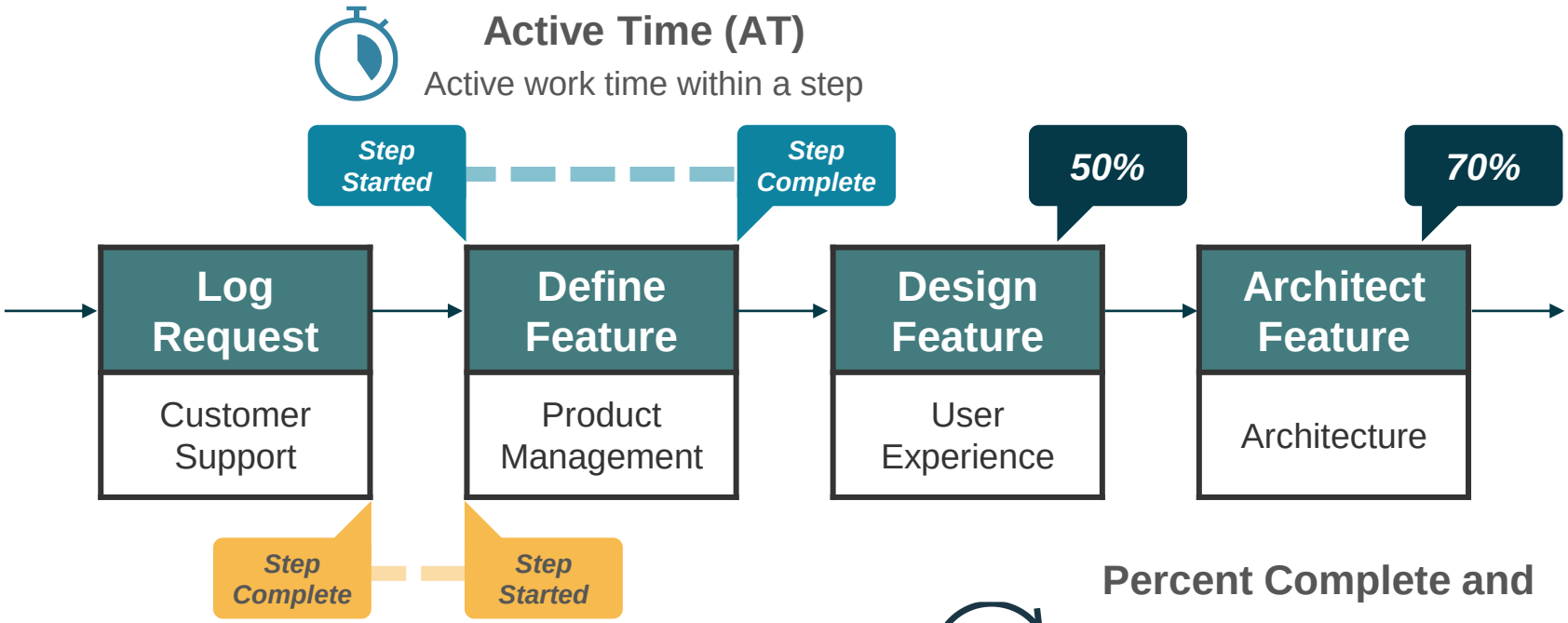
- Coaching flow is a specialized skill that needs leaders and practitioners who continually optimize the value stream.
- Multiple roles have ‘Flow’ as a responsibility area e.g., SM/TC, RTE, STE
- Agile Teams and ARTs are organized to deliver value
- A heavy responsibility falls on SPCs



5 Steps to Implementing a Flow-Based System

1. Facilitate Value Stream Mapping

Three key metrics are applied at each step



Current State Value Stream Map Canvas (Example)

Business Context

Value Stream:	Customer:
Mobile Banking	VP, Digital Solutions
Trigger:	**Demand Rate:**
Feature Request	10 features per month
First Step:	**Last Step:**
Log Request	Release App Update

Use Case:

Develop and release a standard update to the mobile banking app. An app update contains 5 features on average.

Baseline Metrics

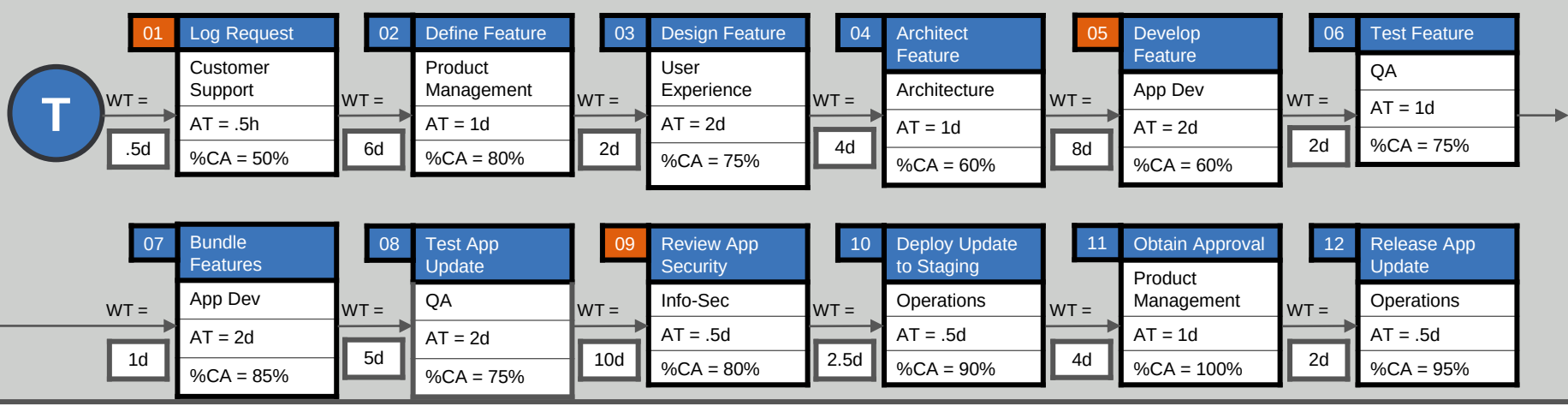
Total Active Time (AT_t) *(Sum of all WTs)*	14d
Total Flow Time (FT_t) *(Sum of all ATs and WTs)*	61d
Total % Complete and Accurate ($\%CA_t$) *(Product of all %CAs)*	3.5%
Flow Efficiency (*FE*) *(AT_t/ FT_t)*	23%
Flow Velocity (*FV*) *(Items deliverable over unit of Demand Rate time)*	2.5 feat./ month

Analysis

Top Problem Steps:	Impacted Metrics:
09 Review App Security	WT
05 Develop Feature	WT, %CA
01 Log Request	%CA

Top Causes of Delay:			
Waiting	09		
Unnecessary Documentation & Process	09	05	
Underutilized Talent		05	
Partial Work		05	01

Current State Value Stream Map



Future State Value Stream Map Canvas (Example)

Business Context

Value Stream:	Customer:
Mobile Banking	VP, Digital Solutions
Trigger:	**Demand Rate:**
Feature Request	10 features per month
First Step:	**Last Step:**
Log Request	Release App Update

Use Case:

Develop and release a standard update to the mobile banking app. An app update contains 5 **prioritized** features on average.

Metrics

	Baseline	Target	Gain
Total Process Time (AT_t)	14d	**7.5d**	2x
Total Flow Time (FT_t)	61d	**14.5d**	4x
Total % CA ($\%CA_t$)	3.5%	**60%**	17x
Flow Efficiency (*FE*)	23%	**52%**	2x
Flow Velocity (*FV*)	2.5 / mo	**10 / mo**	4x

Plan

Business Owner:	Epic Owner:
VP, Digital Solutions (Maria)	Sr Director, App Dev (Ian)

Epic Description:

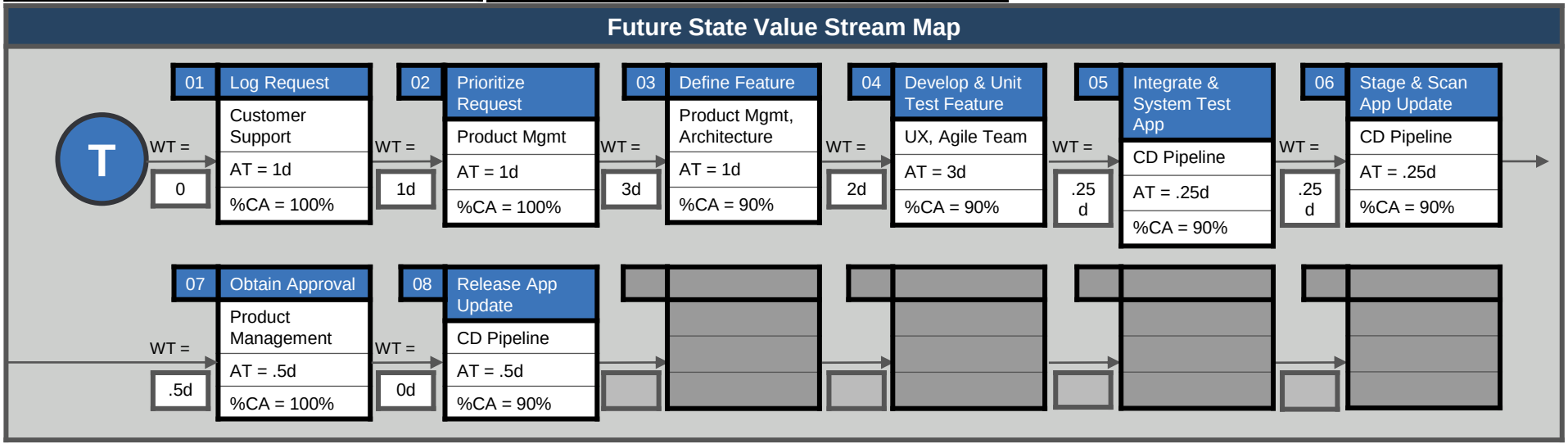
Streamline Mobile Banking Value Stream

Top 3 Features

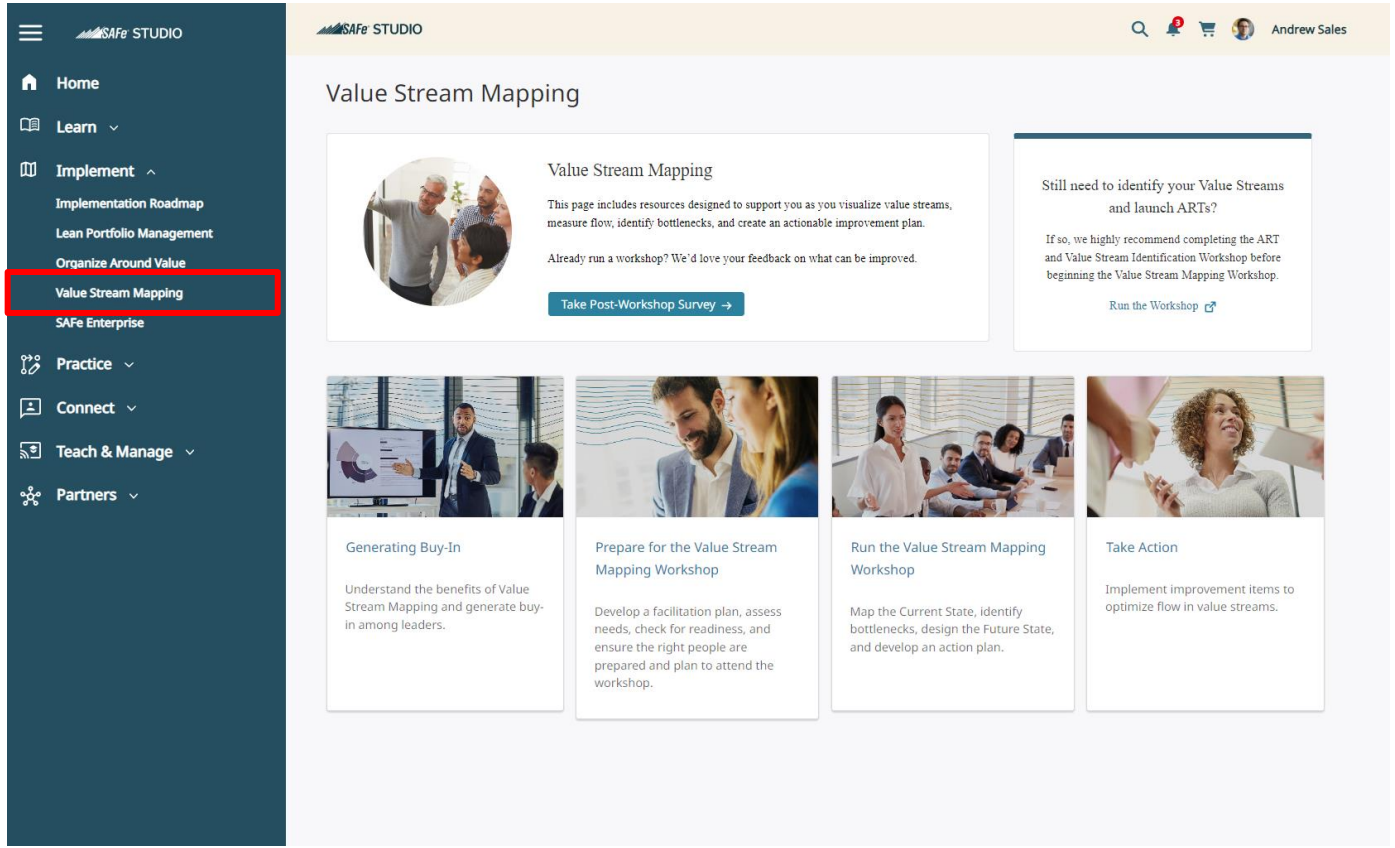
- Organize cross-functional Agile teams
- Implement CI/CD pipeline and DevSecOps practices
- Add data/input validation to Suggestion Box app

ART(s):	Target PI:
Shinkansen	SH.17

Future State Value Stream Map



Resources for Value Stream Mapping



2. Establishing the Kanban System

What is a Kanban system

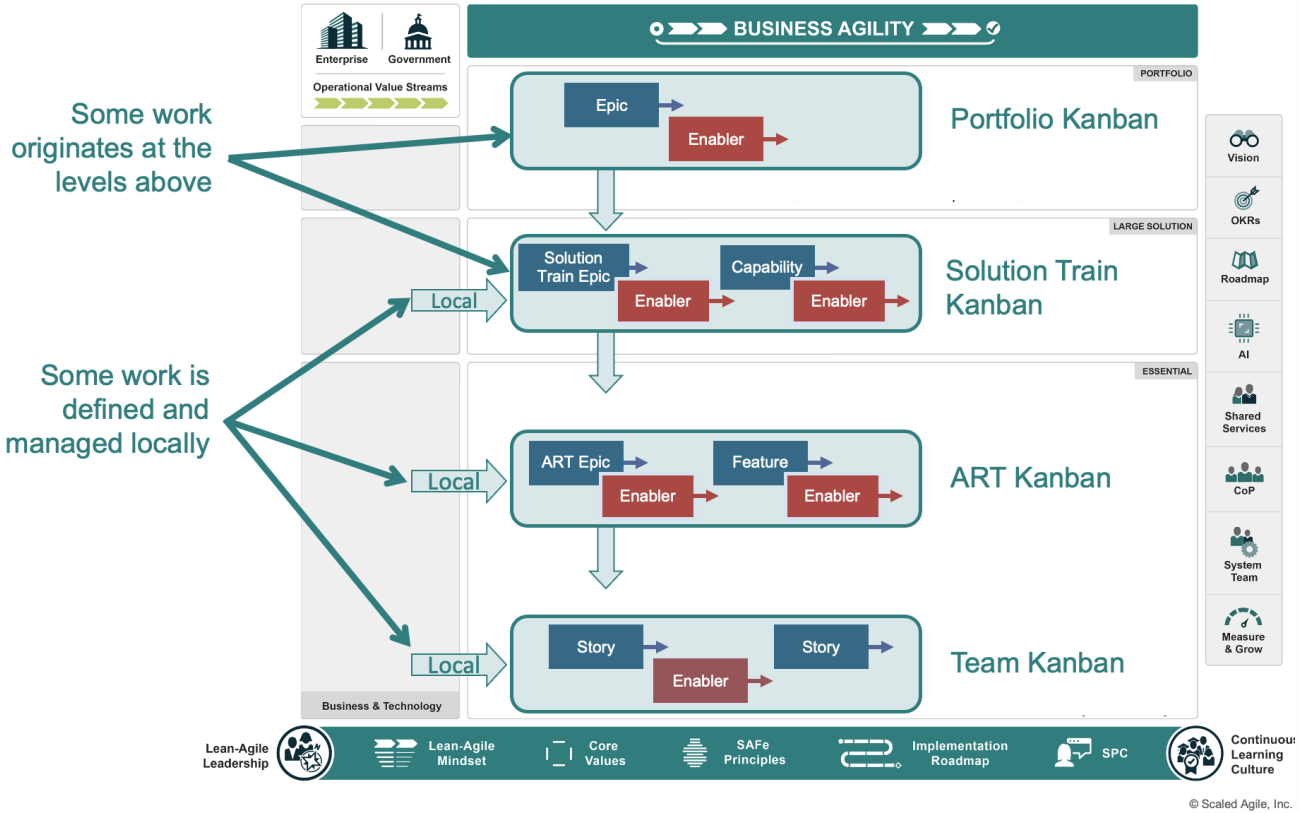
The Kanban method provides a strategy for optimizing the flow of value using a visual, pull-based system instead of work being pushed to or by the team.

“Kanban comprises the following three practices working in tandem

1. Defining and visualizing a workflow
2. Actively managing items in a workflow
3. Improving a workflow.”

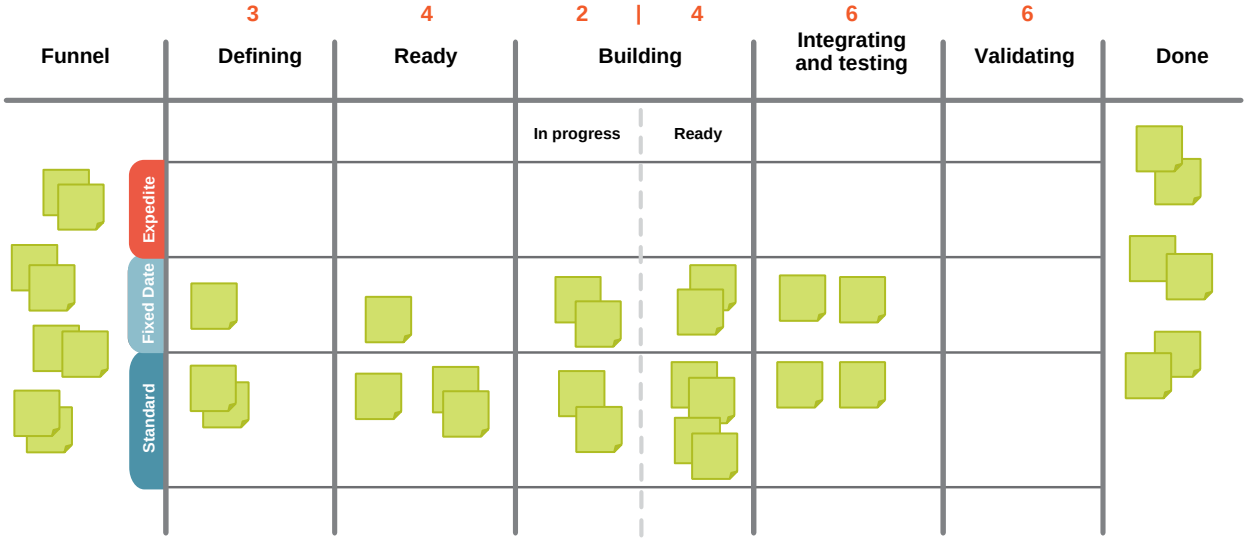
The Kanban Guide

Connected Kanban systems in SAFe



Establishing the Kanban system

1. Map the workflow
2. Arrange the workflow steps
3. Identify buffer states
4. Create policies
5. Assign initial WIP limits
6. Identify classes of service



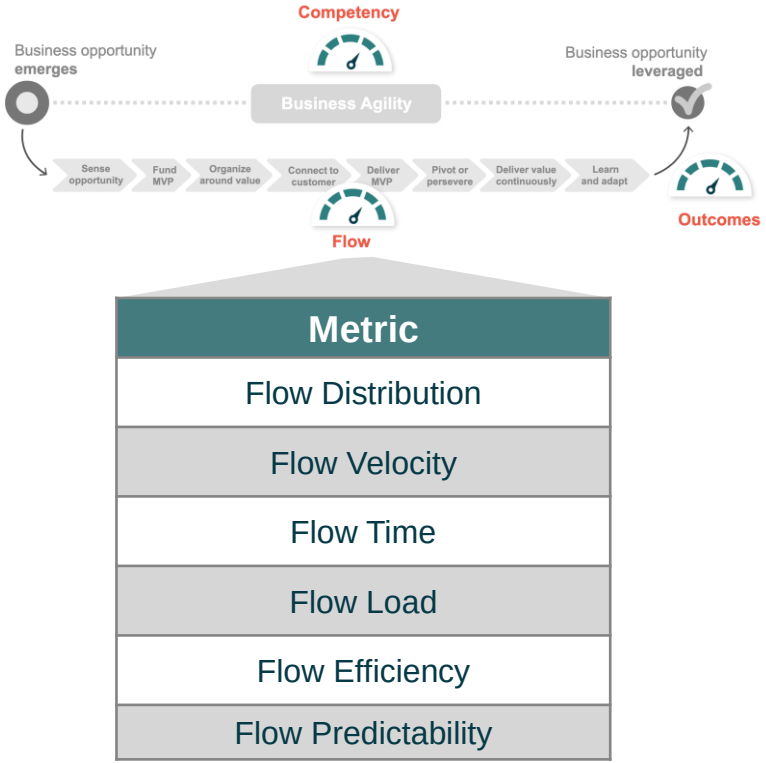
https://scaledagileframework.com/advanced-topic-applying-kanban-in-safe/

3. Measuring Flow

Flow Metrics

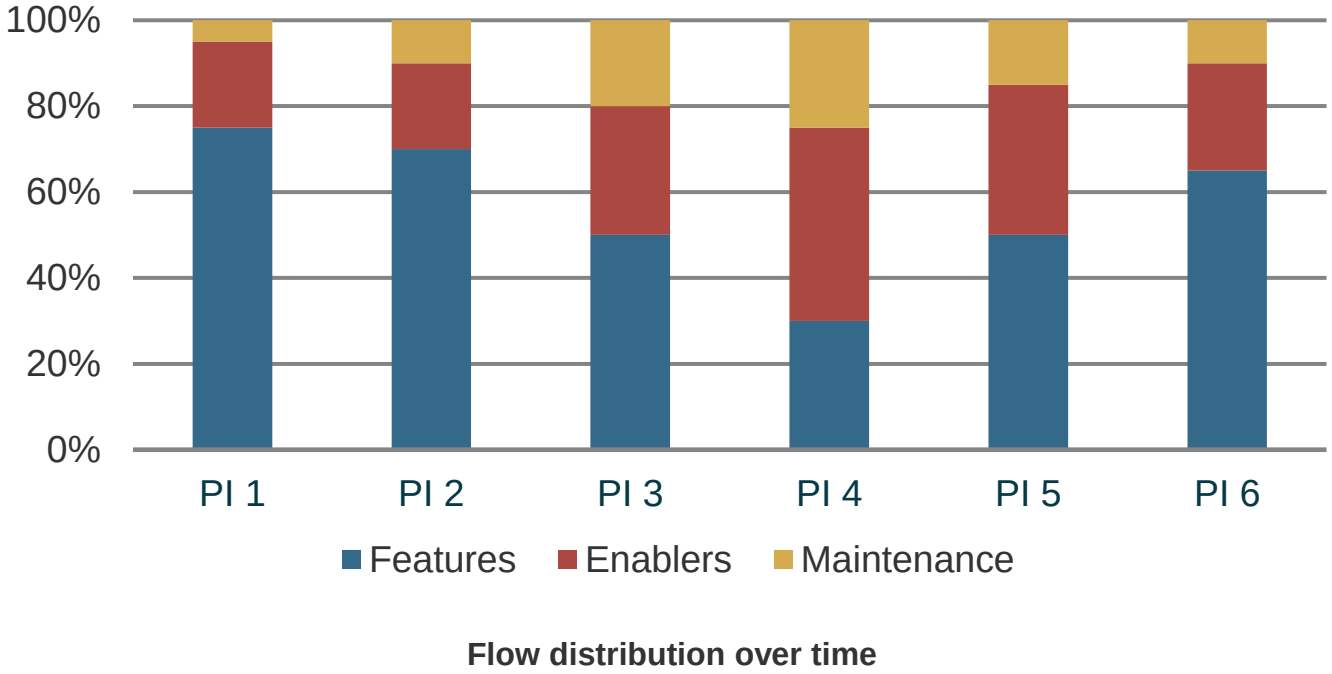
How efficient is the organization at delivering value to the Customer?

- Provide insights into the efficiency of our delivery pipeline
- Highlights opportunities for removing delays and increasing our speed and agility



Flow distribution

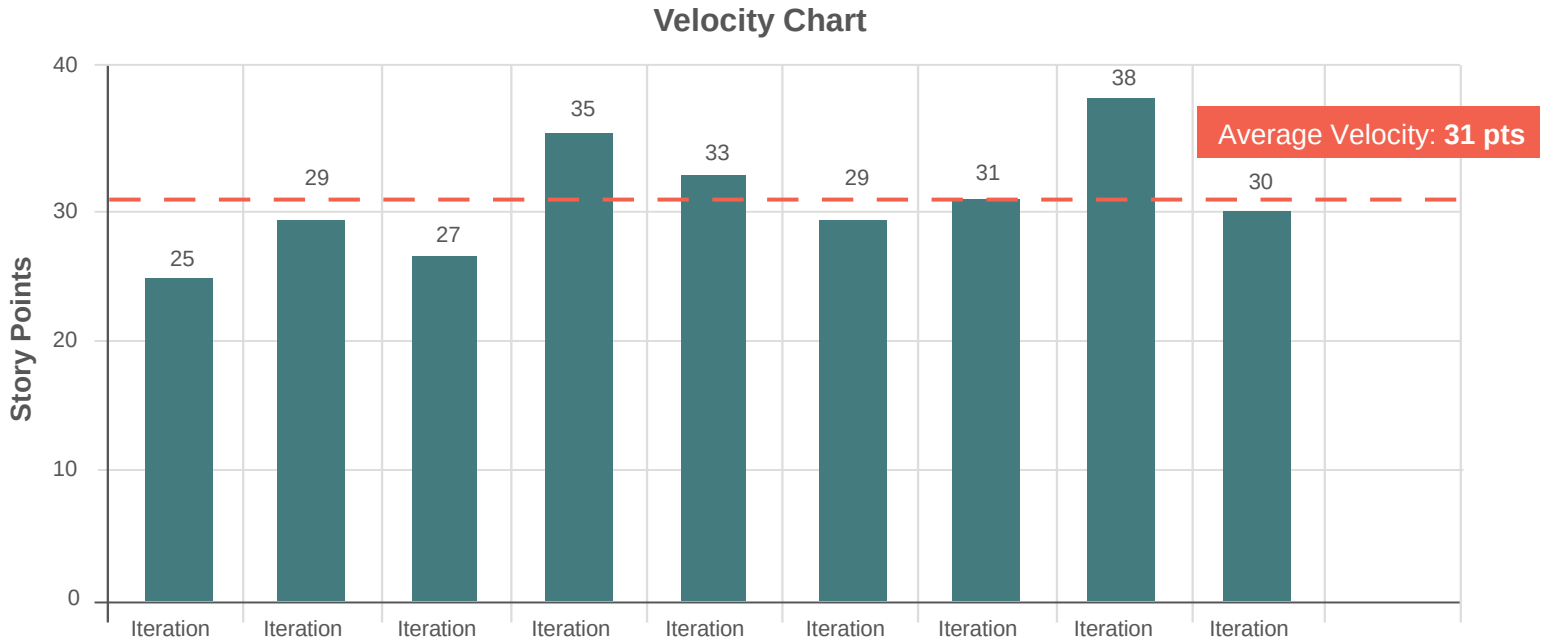
Flow distribution measures the amount of each type of work in the system over time.



Flow distribution over time

Flow velocity

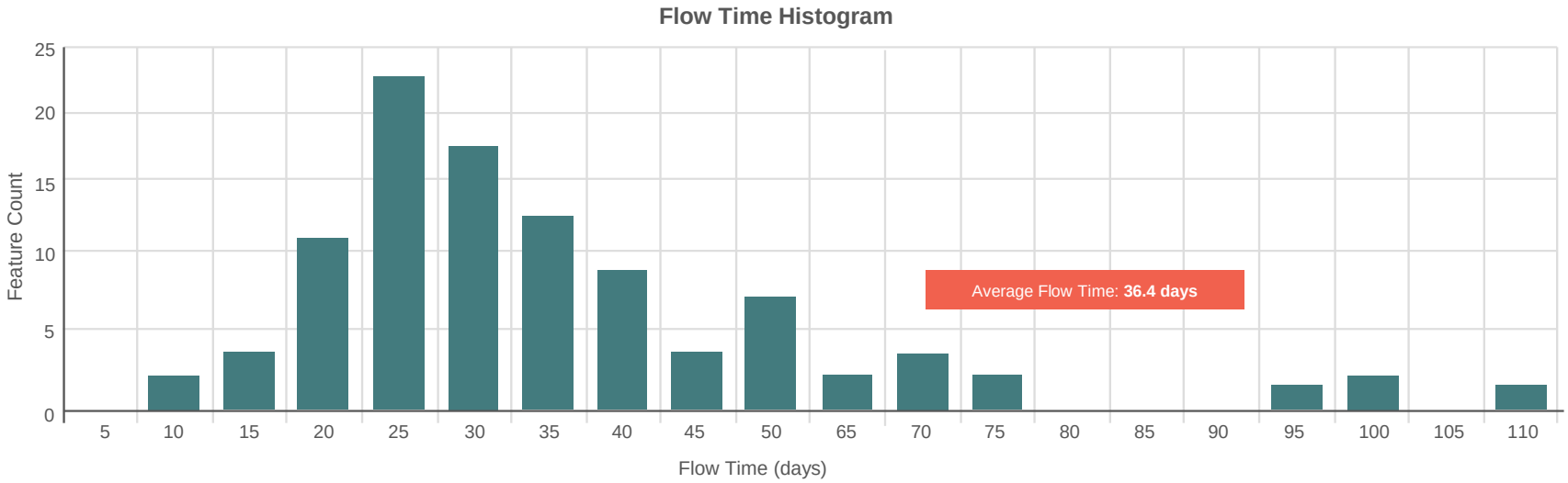
Flow velocity measures the number of backlog items completed in a given timeframe.



An example of an Agile Team's flow velocity in Story points per Iteration

Flow time

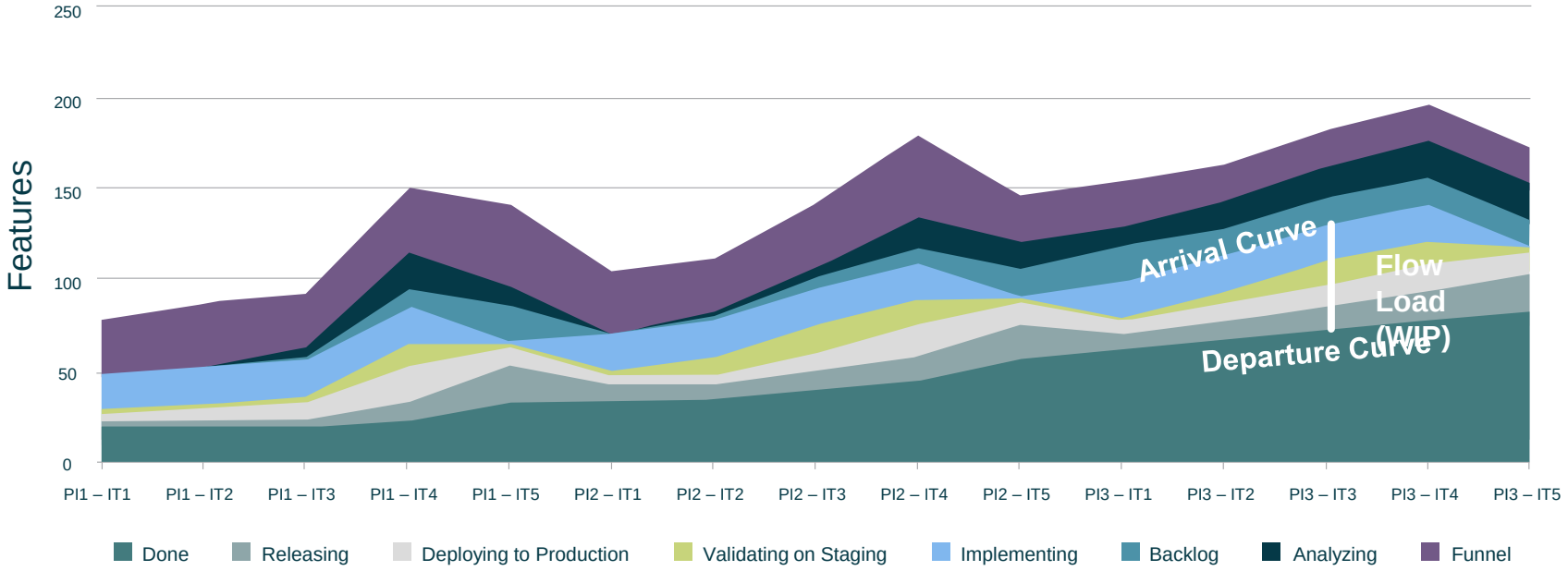
Flow time measures the elapsed time from when an item enters the system to the moment it is delivered to the Customer.



Measuring Feature flow time with a histogram

Flow load

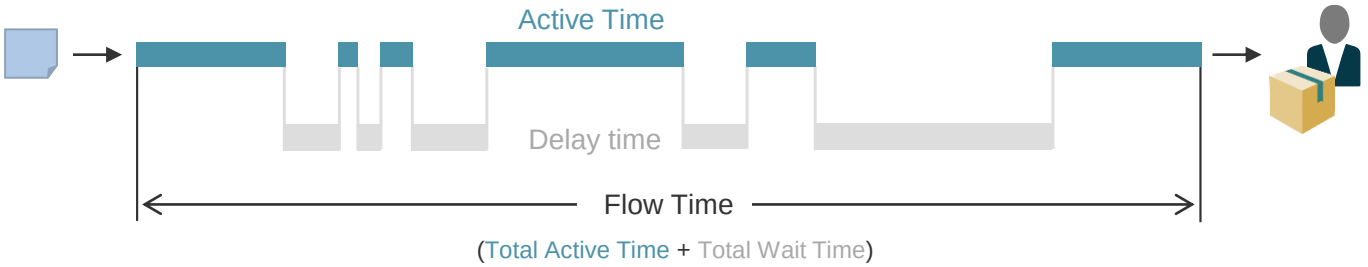
Flow load indicates how many items are currently in the system.



Visualizing flow load with a cumulative flow diagram

Flow efficiency

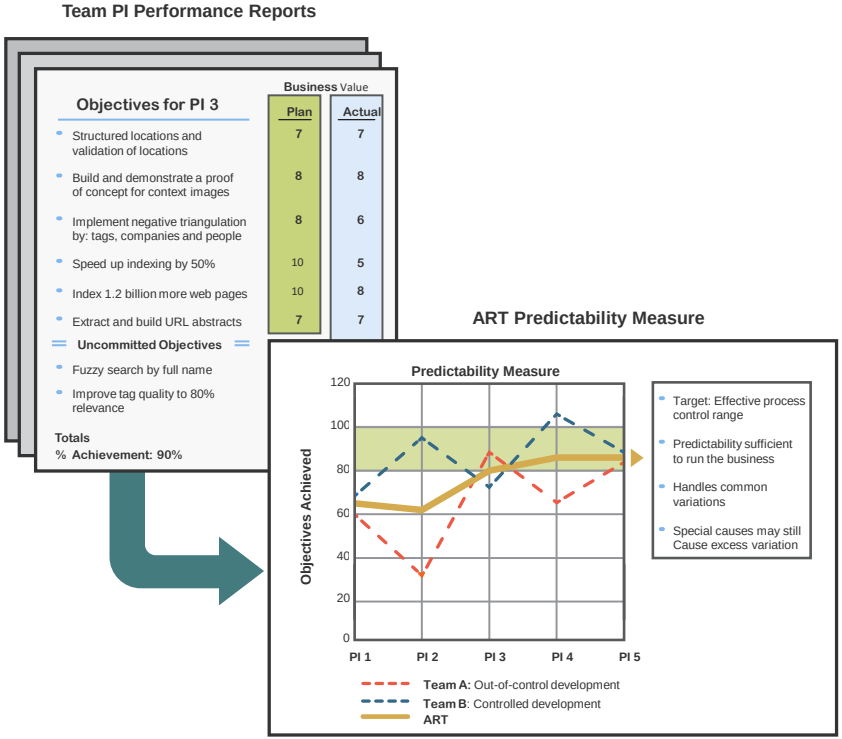
Flow efficiency measures how much of the overall flow time is spent in value-added work activities vs. waiting between steps.



$$\text{Flow Efficiency} = \frac{\text{Total Active Time}}{\text{Flow Time}}$$

Flow predictability

Flow predictability measures how well teams, ARTs and Solution Trains are able to plan and meet their PI objectives.



Apply complimentary metrics

- Just collecting metrics is not enough. If interpreted without proper understanding, an indicator might be quite misleading e.g.
  - Flow time is decreasing at the expense of quality
  - Flow predictability is increasing but flow velocity is going down
- Use **Complimentary Metrics** to ensure that improvement in one metric is not achieved at the expense of another.

Level	Decision(s) / Question(s)	Measurement Domain	Metric	Complementary Metric
ART	Are we reducing our time to market?	Flow	Flow Time	Customer NPS

Caution…

- Any measurement system only provides a partial picture of reality. Simply adding more metrics does not always improve visibility.
- ‘Managing by just the numbers’ can lead to poor outcomes and even worse morale.
- There is a ‘story’ behind every number that contains important information. Formal measure and informal observation reinforce one another.
- A powerful tool is direction observation (Gemba) of the environment of where the work is done, or where the value is consumed.

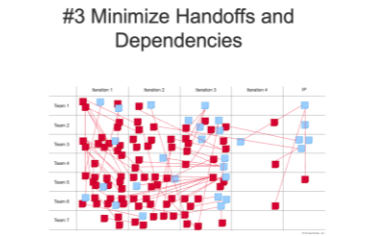
For example, lower team productivity could be caused by:

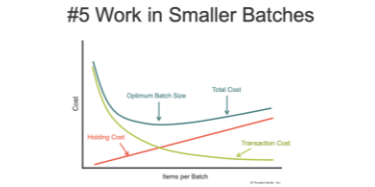
Working with a new technology, team sickness, onboarding new team members, quality issues, changing priorities etc.

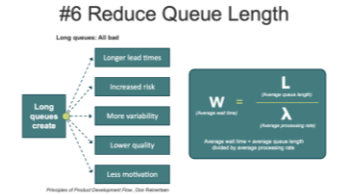
4. Accelerate Flow

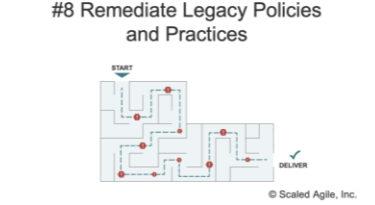
The eight Flow Accelerators

1. Visualize and limit WIP
2. Address bottlenecks
3. Minimize handoffs and dependencies
4. Get faster feedback
5. Work in smaller batches
6. Reduce queue lengths
7. Optimize time ‘in the zone’
8. Remediate legacy policies and practices









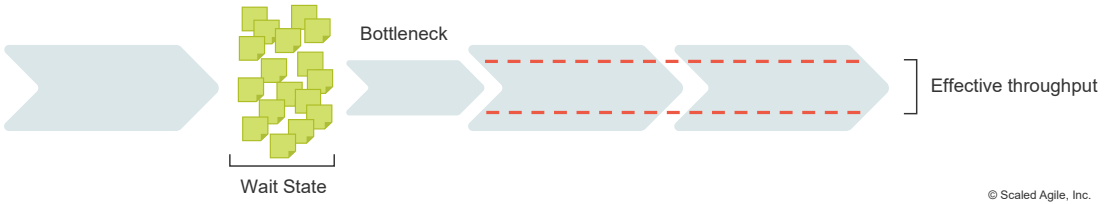
#2 Address bottlenecks

Why it matters?

Team productivity is constrained by bottlenecks and the system cannot meet the demand placed upon it

What to do about it?

- **Start by identifying bottlenecks:**
  - An insufficient number of people with a given expertise
  - Overspecialization
  - Poor team discipline
  - Excessive technical debt
  - Lack of availability of a shared service
  - Lack of customer feedback



- **Increase capacity at the bottleneck** by applying Built in Quality and other Agile practices, or
- **Bypass the bottleneck** with selective replanning

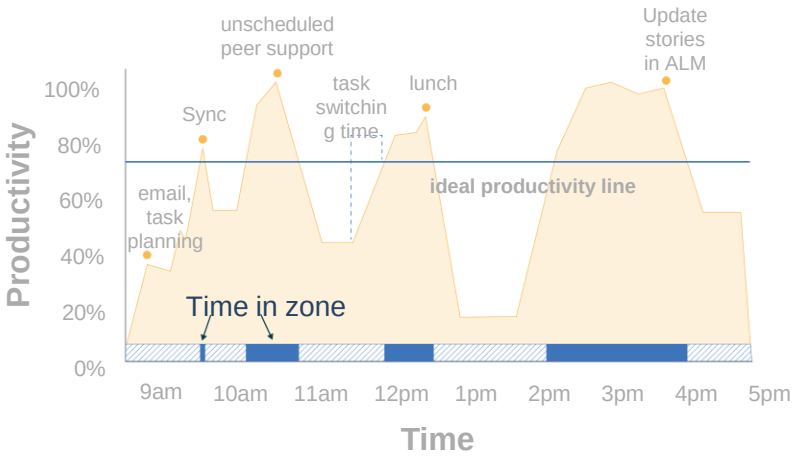
#7. Optimize time ‘in the zone’

Why it matters?

People and teams in the zone demonstrate high levels of creativity, productivity, happiness, and fulfillment

What to do about it?

- **Optimize meetings and events** and question the efficiency of all meetings
- **Keep work-in-process low** to reduce context-switching
- **Use productive collaboration patterns** like pair work and mob programming
- **Maintain work product health** to ensure it doesn’t become harder to maintain the system



2.4 hrs (time in zone) / **8 hrs** (full day) = **30%** of workday spent **in zone**

#8. Remediate legacy policies and practices

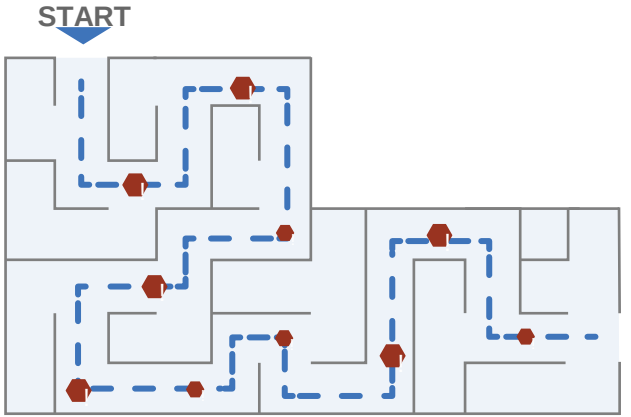
Why it matters?

Old and New practices can't simply be added as part of a transformation. Some are mutually exclusive; some are directly counterproductive, and some just drive overhead.

What to do about it?

Leaders must constantly be on the lookout for impediments to flow. Examples include:

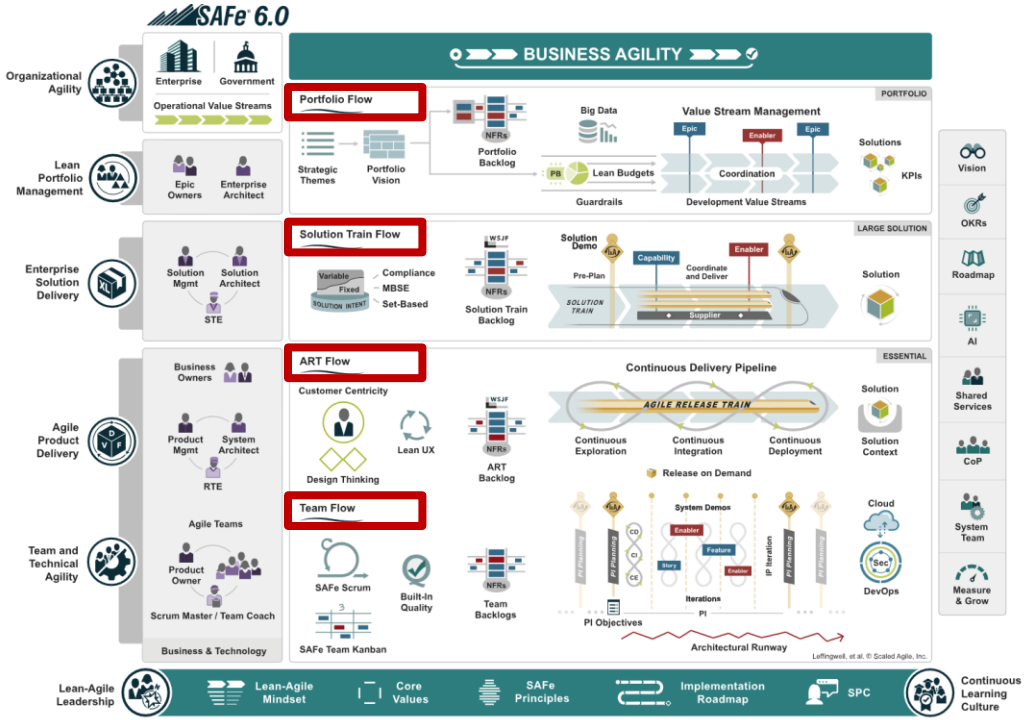
- Keeping manual status reporting in place
- Maintaining old time sheets
- Mandating practices like documenting design decisions
- Forcing documentation on every defect
- Mandating traceability of non-critical code
- Separating developers and testers to achieve 'separation of quality concerns'



- Extraneous meetings
- Extra reporting
- Timesheet reporting
- Legacy CCB
- Waterfall Quality Management System
- Waterfall mindset
- Iron Triangle
- Stage-gate milestones
- Legacy compensation
- Obsolete standards

Accelerators apply differently to each SAFe level

- Four new articles, Team Flow, ART Flow, Solution Train Flow, and Portfolio Flow, describe applying the eight flow accelerators
- Each article offers techniques for addressing, optimizing, and debugging issues with achieving continuous value flow at that specific level



Flow Metric	Problems Surfaced	Flow Accelerator to Remediate
Flow Distribution – The portion of each backlog item type	Too much focus on business features leading to solution health degradation, slowing development.	4. Get faster feedback 6. Manage queue lengths
Flow Velocity – number of items completed in a given time	• Underlying problems with productivity. • Unpredictable velocity from one time period to the next.	5. Work in smaller batches 7. Optimize 'time in zone'
Flow Time – Time work spends in the workflow.	Slow time to market causing customer to wait and incurring a cost of delay.	1. Visualize and limit WIP 3. Minimize handoffs and dependencies 5. Work in smaller batches 8. Remediate Legacy Policies and Practices
Flow Load – total work in process	Excess work in process leading to increased flow time as queues build up in the system.	1. Visualize and limit WIP 6. Manage queue lengths
Flow Efficiency – ratio of active time to total time	Large amounts of waste in the system along with bottlenecks and delays that need addressing.	2. Address bottlenecks 3. Minimize handoffs and dependencies 8. Remediate Legacy Policies and Practices
Flow Predictability – planed vs. actual business value delivered	Low or erratic predictability highlights underlying problems in technology, planning, or organization performance that need addressing.	4. Get faster feedback 5. Work in smaller batches

Growing a Flow Mindset

Growing a flow mindset

- **Ensure teams and stakeholders are trained in key flow concepts** - provide training on the Lean-Agile Mindset and the importance of flow in accelerating value delivery
- **Make flow transparent** - help teams understand and implement Kanban systems to visualize flow and surface impediments
- **Help teams and stakeholders take ownership of flow improvements** - coach teams and stakeholders on the importance of proactively identifying and implementing opportunities to improve flow
- **Use flow Metrics as empirical evidence for improvements** - coach the application of the six flow metrics at every level to demonstrate improvements to flow and identify the next areas to focus on

THANK YOU